



APPLICANT(S): SHAHAB ARIE ET AL.
SERIAL NO.: 10/553,14
FILED: April 20, 2004
Page 2

LISTING OF CLAIMS

1. **(Previously Presented)** An all optical chopping device for shaping and reshaping comprising:
 - an optical splitter having an input terminal and first and second output terminals;
 - and
 - an all optical AND logic gate having first and second inputs associated with said first and second output terminals, respectively, and at least one output, wherein one of said first and second inputs includes an optical delay line,
 - wherein said splitter is arranged to receive an optical input signal from said input terminal and to split the optical input signal into first and second optical signal components to exit at said first and second output terminals, respectively,
 - wherein said AND logic gate is arranged to receive said first and second optical signal components via said first and second inputs, and to produce at said output an optical output signal corresponding to a portion of the AND product of said first optical signal component and said second optical signal component, said optical output signal being narrower than said optical input signal.
2. **(Previously Presented)** The device of claim 1 wherein said first optical signal component and said second optical signal component are delayed relative to each other.
3. **(Previously Presented)** The device of claim 2 wherein said delay is shorter than one of said first optical signal component and said second optical signal component.
4. – 9. **(Cancelled)**

APPLICANT(S): SHAHAR, Arie et al.
SERIAL NO.: 10/827,314
FILED: April 20, 2004
Page 3

10. **(Previously Presented)** The device of claim 1 wherein one of said first and second inputs of said optical AND gate includes an optical amplifier.
11. **(Original)** The device of claim 1 wherein said device further includes a closed loop phase control.
12. **(Original)** The device of claim 1 wherein said device further includes a closed loop synchronization control.
13. **(Previously Presented)** The device of claim 1 wherein said optical output signal is produced by head chopping of said optical input signal.
14. **(Previously Presented)** The device of claim 1 wherein said optical output signal is produced by tail chopping of said optical input signal.
15. **(Cancelled)**
16. **(Previously Presented)** The device of claim 1 wherein said first optical signal component and said second optical signal component are coherent.
17. **(Previously Presented)** The device of claim 1 wherein said AND logic gate includes a summing gate selected from a group of summing gates containing beam splitters, dielectric beam splitters, metallic beam splitters, dual gratings, interleaved arrays of waveguides, and dense dual gratings.
18. **(Original)** The device of claim 1 wherein said AND logic gate includes a threshold device.
19. **(Previously Presented)** The device of claim 1 wherein said AND logic gate includes an optical loop.
20. **(Original)** The device of claim 1 wherein said AND logic gate includes a non linear optical loop.

APPLICANT(S): SHAHAR, Arie et al.
SERIAL NO.: 10/827,314
FILED: April 20, 2004
Page 4

21. (Previously Presented) The device of claim 1 wherein said optical delay line
is a variable optical delay line.